ANNUAL REPORT

1987 - 1988

Alberta

WATER RESOURCES COMMISSION

Alberta
WATER RESOURCES
COMMISSION

910 Harley Court, 10045 - 111 Street, Edmonton, Alberta, Canada T5K 2M5 403/422-4232

89-05095/

Office of the Chairman

The Honourable Dr. P. N. Webber
Chairman, Economic Planning and
Resource Development

Sir:

I have the honour to present the Annual Report of the Water Resources Commission for the year ending March 31, 1988.

Respectfully submitted,

Glen Clegg, M.L.A.
Chairman

Alberta
ENERGY

Office of the Minister

228 Legislature Building, Edmonton, Alberta, Canada T5K 2B6 403/427-3740

February 13, 1989

Her Honour Helen Hunley
Lieutenant-Governor
of the Province of Alberta

Madam:

I have the honour to hereby transmit the Annual Report of the Water Resources Commission for the year ended March 31, 1988.

Respectfully submitted

Neil Webber

Neil Webber
Minister

HENRY KROEGER
1917 - 1987

Henry Kroeger, M.L.A. for Chinook and Chairman of the Water Resources Commission passed away on September 17.

Mr. Kroeger had been Chairman of the Commission since its inception in 1982 and before that Chairman of the Water Advisory Committee. Water and its availability were major concerns for Mr. Kroeger and he was instrumental in the formation of the Commission.

The Soil Conservation Society of America presented Mr. Kroeger with one of their highest awards, the Honor Award, at their annual meeting in August of 1987. The award was presented in recognition of his leadership in soil and water conservation.

The Henry Kroeger Memorial Graduate Scholarship has been set up in his honor at the University of Alberta. It is awarded annually to a student displaying superior academic achievement in soil and water research geared toward the enhancement of rural life in western Canada and Alberta in particular. Graduate students in Civil Engineering, Agricultural Engineering, Soil Science, Plant Science, Geography, Geology or Rural Economy are eligible to apply. Donations may be made to the University of Alberta, Student Awards.

ALBERTA WATER RESOURCES COMMISSION
ANNUAL REPORT 1987 / 1988

The Water Resources Commission is an advisory body which makes recommendations to the Alberta government with regard to:

a) long term water resource planning in relation to agriculture, economic, community and environmental factors;

b) evaluations of specific short and long term water resource projects;

c) intergovernmental negotiations affecting the water resources of Alberta; and

d) the administration and general policy of the government regarding water resources.

The Water Resources Commisison Act of 1983 established the Commission and defined its mandate. Prior to that time a Water Advisory Committee had provided advisory services to the government on matters of water policy and planning. The 1983 Act established the Commission with a legislative basis and broadened its scope in relation to the earlier committee. The Act also set out an initial five year term for the Commission ending December 1987.

The mandate of the Commission was extended to December 31, 1992 by the authority of the Water Resources Commission Amendment Act, 1987, passed on June 17, 1987.

On March 16, 1988 an Order In Council (O.C. 159/88) appointed Glen Clegg, M.L.A. for Dunvegan as Chairman of the Commission and Thomas Musgrove, M.L.A. for Bow Valley as a Commission member.

Also during this year the Commission representative from Municipal Affairs changed. Mr. Dennis Surrendi, A.D.M. Improvement District and Native Services Division is the member for that department.

Mr. Robert Cronkhite, Executive Director of the Commission, retired effective March 31, 1988. Commission members recommended to Cabinet that Dr. Alfred Birch be appointed to succeed Mr. Cronkhite.

MAJOR WATER MANAGEMENT ACTIVITIES

South Saskatchewan River Basin Water Management Policy

The follow-up activities to the release of the Commission's report and recommendations continued during the year. Effort was concentrated on three major areas: the development of guidelines for irrigation expansion (discussed below), a review within Alberta Environment of policy in the South Saskatchewan River Basin and the development of an instream flow needs strategy.

The determination of instream flow needs for water quality, recreation and fisheries habitat is a priority issue in this river basin. The Commission endorsed a draft strategy to determine these flow amounts. This strategy called for the involvement of a number of departments and for public participation. This work will eventually be expanded to the other basins in the province.

The Commission met with the Red Deer and Palliser Regional Planning Commissions to discuss their concerns regarding the future use and availability of water in the Red Deer River basin.

Irrigation

Water Supply Limits — Guidelines to Irrigation Expansion

The issue of the limits of the water supply to fulfill an increasing number of demands, both consumptive and non-consumptive, is recognized as critical to water management in the South Saskatchewan River basin. The Commission has noted the need in developing the guidelines to consider multi-purpose uses, risk criteria, water quality objectives, a reserve of water for future development in particular areas and to encourage efficiency.

Alberta Environment provided the Commission with proposed irrigation acreage limits for discussion purposes. Subsequent to meetings with the Irrigation Council and the Irrigation Districts some adjustments to the suggested numbers were made. Members also recognized the need to discuss the proposal with private irrigators and the general public. The Commission decided to hold open houses, during the next fiscal year, in three to five locations in the Bow and Oldman sub-basins.

The future refinement and implementation of the guidelines will require more detailed information on instream flow needs and irrigation risk criteria as well as an examination of water management policy in the SSRB. Each of these initiatives is encouraged by the Commission.

Irrigation Capital Works Rehabilitation Program

The Commission participated in a review of the assessment of this program requested by Alberta Agriculture. The assessment lead to a number of recommendations regarding how the program should be run in the future. The commission reviewed and agreed with the recommendations made by Alberta Agriculture, noting several points which need to be emphasized:

1. the supply of water is limited and the expansion plans of the Irrigation Districts need to recognize this and be in line with potential future water supplies;

2. there is a need for the Irrigation Districts to move toward financial self sufficiency in the area of operation and maintenance costs; and

3. there should be a clear statement that the program will end. In recognition of this, priorities need to be established so that the most important work is completed.

Irrigability Studies

The Commission completed its support of the assessment of the irrigation potential of soils in southern Alberta. The study has examined approximately 1.9 million acres of land and provided information on the areas where the soils are most suitable for irrigation. The map included in this report shows all the areas analyzed during the four years of this study.

Drainage Potential in Agricultural Alberta

The evaluation of drainage potential in Alberta was completed and the final report, Drainage Potential in Alberta: An Integrated Study, was transmitted to Cabinet and approved for release in conjunction with the Agricultural Land Base Study.

The major findings of this study were:

1. there are approximately 12 million acres of wetlands in the agricultural area of Alberta;

2. over 75 percent of this is located in the five northern river basins and of these approximately 2 million acres of sloughs and sheetwater have the highest potential for drainage;

3. drainage has a significant negative impact on wildlife. Drainage of the non-permanent wetlands in the five northern basins would reduce provincial waterfowl populations by more than 50 percent;

4. from the farmer's perspective it is financially attractive to drain non-permanent wetlands provided he is not required to pay for an off-farm outlet; and

5. from a public perspective drainage of non-permanent wetlands is generally only economically feasible if wildlife habitat mitigation costs are not included, erosion control costs are low and non-permanent wetlands are abundant; control of drainage flow releases at the farm level significantly reduces off-farm drainage costs by reducing peak downstream flows.

The major recommendations of this study were that:

1. the government include drainage in interdepartmental water management plans for each major river basin. These would include technically sound long range designs, cost effective drainage development and natural resource conservation;

2. existing program funding be provided to drainage only after adequate integrated planning has been completed;

3. during planning, a detailed assessment of the potential drainage benefits and wildlife habitat losses should be included. If habitat is regionally important and drainage benefits are worthwhile, then public funding for appropriate levels of habitat mitigation should be provided; and

4. funding be provided for the development and testing of drainage techniques which reduce downstream impacts and provide for wildlife habitat mitigation.

The findings and recommendations of this report were in agreement with the objectives of several other studies. The sub-basin water management planning program was begun during the course of the drainage inventory and the on-farm water management study and the development of a wetlands management policy have been initiated as a result of this study. These are discussed below.

Sub-Basin Water Management Planning in Northwestern Alberta

Action continued on the development of sub-basin water management plans for the agricultural area of northwestern Alberta. Local authorities in this area require integrated plans which address drainage, erosion and flood control problems in a planned and sequenced manner. The backlog of water management applications makes it essential that available funds are directed to the highest priorities. Several important features characterized this year's work:

1. seven high-priority water management units were identified and a series of technical reports were completed;

2. these technical studies included an assessment of farm water conservation alternatives and opportunities. Preliminary results have shown that on-farm water management may be required since conventional drainage designs and erosion control measures are often prohibitively expensive. Parallel efforts to test and demonstrate farm water conservation measures were closely coordinated with this study;

3. meetings with local authorities were held to disseminate study information and seek local input; and

4. the study continued to proceed under the direction of an interdepartmental steering committee, ensuring the consideration of agricultural, wildlife, engineering and municipal administration factors.

It is anticipated that future work will focus on the development of water management unit plans based on the technical reports produced to date and on more extensive public consultation. It is recognized as essential that plans be developed with strong public understanding and endorsement.

On-Farm Water Management

The Commission approved and funded an on-farm water management study to document the costs, benefits, hydrology, and wildlife impacts and operational details regarding on-farm water management alternatives and methods used by or available to farms in northern and central Alberta. An important component of the study is the use of the research farms as demonstration projects for other producers and local authorities.

The study is to examine the following wetland management alternatives:

1. controlled drainage — the rate of release of water off the quarter section is slowed by some structural means;

2. slough consolidation for agricultural objectives — the drainage of some wetland areas on a quarter section and consolidation of the drained water in one or more areas to be used for agricultural purposes;

3. slough consolidation for habitat objectives — drainage as in 2 with the water consolidated, usually in one corner of the quarter, in a depression designed and enhanced to provide maximum waterfowl habitat;

4. peatland water management — controlling the water levels in peatland areas to provide for forage or crop production; and

5. uncontrolled drainage — to document the impacts of conventional drainage practices.

An interdepartmental steering committee was established to direct this multi-year project. A private consulting team was selected and the process of site selection begun.

Wetlands Management and Conservation Policy Development

The issue of a wetlands management policy is central to several of the other wetland studies and important to a number of departments. The Commission recognized that while there is a high level of demand for drainage from the farming community, continuation of current drainage practices would have major negative consequences for wildlife habitat and other environmental values. There is not, however, an existing institutional framework to readily address these problems. The members, therefore, approved a study which would review the existing situation, including the legislation, policies and programs to identify common goals and objectives, and would build on that framework using the experience of other jurisdictions to assess policy and program alternatives for Alberta. Recommendations will be made to Cabinet when the study is completed. An interdepartmental steering committee was named and the terms of reference developed for a one year study.

ISSUES AND ACTIVITIES

During the year the Commission held eight regular meetings and considered a number of issues which are relevant to the long term management of the water resources of the province:

— reviewed a proposal for financial assistance to private irrigators and noted some concerns, especially regarding water supply limits;

— in November the Northern Alberta Development Council held a conference on Water Management in Northern Alberta. In recognition of the importance of a major conference on this topic involving primarily local people, the Commission was active on the steering committee and members also had various roles as speakers and resource persons at the conference. In addition members will be reviewing the recommendations resulting from the conference;

— involved in preparing and reviewing a soil and water conservation strategy for the province. This was a multi-departmental exercise arising from the National Agriculture Strategy. The provincial strategy notes the need for marginal land conversion, recognition of new priorities in the area of soil and water conservation and the importance of agriculture to the provincial economy;

— supported the development of an Atlas of Alberta Lakes to synthesize available information on the physical and chemical parameters, the history, the wildlife and fisheries, and the development and use of approximately 100 provincial lakes;

— gave preliminary consideration to water pricing and noted the issues, such as equity, achieving parity, ability to pay, and consumptive and non-consumptive uses, which would have to be considered before proceeding;

— continued consideration of climatic influences including the greenhouse effect and its potential impact on future water management and conservation direction and policy;

— participated on a drought monitoring committee which advises on the extent of dry conditions and recommends to the government on possible actions to help alleviate the situation for farmers;

— reviewed and endorsed the final draft of the North American Waterfowl Management Plan. Implementation plans for the first phase, as well as the funding arrangements are now being developed. The Commission reiterated the need for a strong commitment to involve landowners;

— continued to monitor transboundary issues including the Prairie Provinces Water Board topics, the Mackenzie basin negotiations and the potential for storage development on the Milk River;

— examined the possibility of recreational development at Eagle Lake and noted that all the potential management alternatives for this lake, including sewage lagoons and off-stream storage, need to be evaluated before any commitments are made;

— reviewed and endorsed a draft groundwater management policy which would consider both the needs to ensure potable water to landowners and to protect the investment of companies using groundwater for oil recovery purposes;

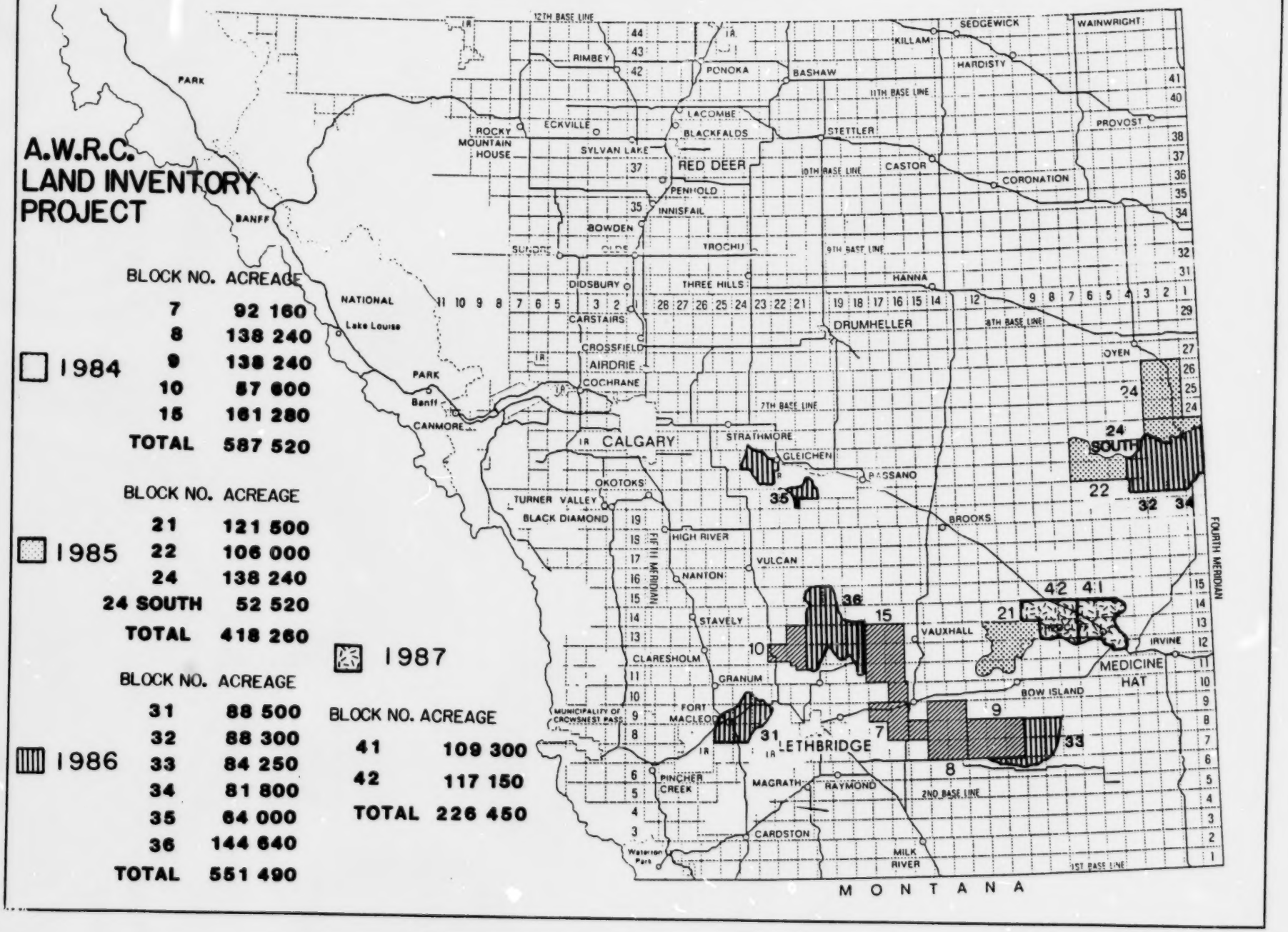
— participated with other government departments in the development of a proposal for a municipal water line from Hanna to the Oyen-Youngstown area. The Commission recommended that any line be for domestic, municipal and stock watering use only and that future consideration of supply development for irrigation be a separate question;

— reviewed recommendations for further work in the Buffalo Bay/Horse Lakes area of Lesser Slave Lake, including attending a local meeting. Noted that major structural controls were inappropriate in this area but some selective projects which might help to alleviate the problem could be considered, provided they did not adversely affect wildlife and fisheries habitat;

— reviewed the status of the Buffalo Lake, Parlby Creek and Spotted Lake plans with respect to local desires for irrigation, flood protection, drainage and lake stabilization as well as concerns for fish and waterfowl habitat. The Commission recommended that the public lands around Spotted Lake be maintained in crown ownership for future habitat purposes;

— received updates on water management considerations and water resource status in specific locations such as Verdegris Coulee, the Battle River basin and the Special Areas. These are each situations in which water availability is a prime concern and which will have to be monitored in the future; and

— participated in several conferences including presenting papers on agricultural wetland drainage at a Soil and Water Conservation Society meeting in Edmonton on "Alternative Agricultural Production Systems: Economic, Environmental and Conservation Considerations" and a Canadian Water Resources Association Conference in Winnipeg on "Agricultural Water Issues in Evolution".


A.W.R.C.
LAND INVENTORY
PROJECT
1984
BLOCK NO. ACREAGE
7 92 160
8 138 240
9 138 240
10 87 600
15 161 280
TOTAL 587 520
1985
BLOCK NO. ACREAGE
21 121 500
22 106 000
24 138 240
24 SOUTH 52 520
TOTAL 418 260
1986
BLOCK NO. ACREAGE
31 88 500
32 88 300
33 84 250
34 81 800
35 64 000
36 144 640
TOTAL 551 490
1987
BLOCK NO. ACREAGE
41 109 300
42 117 150
TOTAL 226 450
PARK
BANFF
NATIONAL
Lake Louise
PARK
Banff
CANMORE
ROCKY MOUNTAIN HOUSE
ECKVILLE
RIMBEY
PONOKA
LACOMBE
BLACKFALDS
SYLVAN LAKE
RED DEER
PENHOLD
INNISFAIL
BOWDEN
OLDS
SUNDRE
TROCHU
DIDSBURY
THREE HILLS
CARSTAIRS
CROSSFIELD
AIRDRIE
COCHRANE
CALGARY
OKOTOKS
TURNER VALLEY
BLACK DIAMOND
HIGH RIVER
NANTON
STAVELY
CLARESHOLM
GRANUM
FORT MACLEOD
MUNICIPALITY OF CROWSNEST PASS
PINCHER CREEK
LETHBRIDGE
MAGRATH
RAYMOND
CARDSTON
Waterton Park
MILK RIVER
MONTANA
KILLAM
SEDGEWICK
WAINWRIGHT
HARDISTY
BASHAW
STETTLER
CASTOR
PROVOST
CORONATION
HANNA
DRUMHELLER
OYEN
STRATHMORE
GLEICHEN
BASSANO
BROOKS
VULCAN
VAUXHALL
IRVINE
MEDICINE HAT
BOW ISLAND
12TH BASE LINE
11TH BASE LINE
10TH BASE LINE
9TH BASE LINE
8TH BASE LINE
7TH BASE LINE
2ND BASE LINE
1ST BASE LINE
FIFTH MERIDIAN
FOURTH MERIDIAN
IR

ALBERTA WATER RESOURCES COMMISSION